and to see the way in which the question was discussed. Mr. Gladstone was impressed by the condition of the House at nine o'clock, but it does not appear that he was impressed with anything else; the importance of education, the importance of science, the importance of art, the daily, almost hourly, increasing importance of these things does not seem to have entered into the question. To a large extent it was merely a question of Cabinet convenience and Parliamentary tweedledum and tweedledee. How can there be made room in the Cabinet for a Minister of Public Instruction? Are not the affairs of the Duchy of Lancaster of much greater importance, and would not the recognition of the importance of education make the Cabinet unwieldy and give rise to difficulties in Parliamentary procedure? And then there is the Scotch business that must be looked after first, and so on, and so on. Education is evidently not in the region of practical politics.

Heaven knows changes sufficiently great have been made of late years, and it is not absolutely certain that the fundamental bearings of the nature of the changes to be made have in all cases been fully considered; but it seems as though they are to be most carefully considered before any change is made touching the matter of education.

Still it is acknowledged that the question is, after all, one that deserves the attention of Parliament, but Mr. Gladstone had, as usual, three objections to make. In the first place he expressed very great doubt whether, if he had a plan ready to alter the present arrangement, it would be wise to make any declaration on the subject by way of motion. Secondly, he admitted that there was no plan, and he did not think the time had arrived for one; and lastly, he considered that the subject ought to be a great deal more examined before the House committed itself to a final opinion whether there should be a plan or not.

With reference to his first objection he stated that the House knew perfectly well that administrative changes are made piecemeal, and must continue to be so; and he remarked that there was a good deal to be said in favour of what was called a patched house, because most of us found it the most comfortable sort of house to live in. A Minister of Public Instruction would be a new patch, and as there is patching going on elsewhere he objects to this; and so on and so on.

The argument which he used in favour of the second objection was, we imagine, the strongest he could have used against it, namely, that the business of the Council Office in respect to education has been in an almost incessant state of flux and change. Of this there can be no doubt that the flux and change will get more pronounced as time goes on. That is the very reason why everything should be brought to a focus.

We may gather from Mr. Gladstone's speech that the Universities should ever, in his opinion, remain divorced from the general question of education; but if so, what is to become of Prof. Huxley's ladder from the gutter to the university? We think, too, if Mr. Gladstone had been fully informed on the subject he could have urged as an additional objection that a great many questions referring to education are never now touched by the Education Department at all.

Several of the speeches might, if we had more space at our disposal, be noticed at some length. Still, we think it worth while to cull the following from the speech of Mr. Forster, an old Vice-President of the Committee of the Council on Education:—

"The Committee of the Council for Trade, or Agriculture, or Education meant nothing whatever. Persons might imagine that the Privy Council occasionally met for the transaction of business, but they never did so either in England or Ireland. The Minister for Agriculture was the President of the Committee of the Council on Agriculture, but he greatly doubted whether that Committee ever met, or ever would meet. . . . The real objection (to Sir John Lubbock's proposal) probably was that it was undesirable to make too much of education, that if we were to have a Minister of Education he might be pushing things on too quickly. . . . There might be a fear that under one Minister too much money would be spent. . . . What was complained of now was that there was no really defined responsibility. The man who moved the estimates and did the work was not the head of a department, and he ought to be. The work was done by a Minister who was controlled by another, and the latter was scarcely seen by the public. He did not see why we should continue that Japanese mode of managing affairs."

It is satisfactory to see that the House of Commons is gradually getting into a better position to discuss such questions as these, but we have felt that the main point is, that the head of the Government does not yet consider that the question of education is one of an importance sufficient to be discussed side by side with what in his opinion is the much larger questions of Parliamentary procedure, and the saving of so many pounds, shillings, and pence. It is true a Select Committee has been agreed to, but we fear that after Mr. Gladstone's speech very little will come of it, as has happened before.

It would be ungraceful not to state that the debate brought out in the clearest possible way the valuable services rendered under great difficulties by the present Vice-President of the Committee of the Council on Education, Mr. Mundella.

But the result remains that we are not to have a Minister of Education. There is agricultural business, including the Rinderpest, and other matters, and these are larger questions than that of national education! Therefore national education must wait. As we said before, we are a longsuffering and patient people. There is, however, little doubt that in some political programme of the future this question will find a place; equal electoral districts and the payment of members are not the only things to be cared for. F.R.S.

EVOLUTION AND CREATION

A Few Words on Evolution and Creation; A Thesis maintaining that the World was not made of Matter by the Development of one Potency, but by that of Innumerable Specific Powers. By Henry S. Boase, M.D., F.R.S., &c. (London: John Leng and Co., 1882.)

Notes on Evolution and Christianity. By J. F. Yorke. (London: Kegan Paul, Trench, and Co., 1882.)

THE first of these works is, as may be inferred from its title, a most curious production. The chief aim of its author is that of sustaining the Biblical Cosmology against what he regards as the fallacious inroads of the theory of Evolution. In carrying out his design he devotes the first part of his book to a general criticism of the Evolution theory, and the second part to a consideration of the first chapters of Genesis, which he regards as justifying his view that the world "was made by the development of innumerable specific powers." Our readers must not suppose from this form of expression that Mr. Boase seeks to develop a system of Polytheism; on the contrary he is a Monotheist of the most orthodox type, and by his "innumerable specific powers" means only the properties with which matter has been endowed by its Creator. This, at least, is the only meaning which we have found ourselves able, after a somewhat hasty perusal of his book, to attach to this term, which constitutes the core of his "thesis." But if this is his meaning we fail to appreciate the speculative importance which he somewhat ostentatiously attaches to his opinions. For the great distinction which he draws between these opinions and those which are held by evolutionists consists, as he says, in their making "no assumption of an unknown matter endowed with an imaginary all-becoming potency." But so far as physical causation is concerned the two statements amount to exactly the same thing; the only difference between them is the old and well-worn distinction between theism and non-theism—viz. as to whether the observed "potencies" of matter are or are not God-endowed. We cannot see that Mr. Boase has contributed anything new to this question, and therefore regard his work as lost labour. There is a simplicity about some of his remarks which appeals to us as almost pathetic. For instance:—"From my point of view, the occurrence of some of the same kinds of organisms in the rocks of adjoining formations may arise from the remains of the older rocks being transported into the newer formations, or from the older organisms being created anew as a part of the more recent series. . . . It may here be noticed that such an alternate destruction and reproduction of living creatures is set forth in the civ. Psalm—'Thou takest away their breath, they die, and return to their dust. Thou sendest forth Thy spirit, they are created; and Thou renewest the face of the earth.' This verbal coincidence is curious, but, of course, cannot be adduced to prove that the doctrine of Creation and science are in accord with one another." If the "point of view" in question is to be thus calmly attributed to "science," the concluding sentence of this passage is one of the very few in the book with which we are able cordially to agree.

Again, speaking of the creation of Eve, our author remarks:—"It may also have served as an occasion for the important lesson, that the Lord God was the Creator of these living creatures (animals), for immediately after this, God gave Adam a practical proof of His power to create a living being." Practical proof, no doubt, but we should have thought almost more startling than could have been justified for the purpose suggested. Seriously, however, the absurdity which such passages as these display might be amusing from the mouth of a street-preacher; from a man of cultivation they are, as we have said, pathetic.

The other work which we have to notice stands in every way at the opposite pole of thinking from the one which we have just considered. For the object of Mr. Yorke is to show that the principles of evolution are alone sufficient, without any hypothesis of supernaturalism, to explain the origin and development of Christianity. The book is, therefore, mainly of an historical character, and although its views cannot fail to be obnoxious to orthodox opinion, the temperate manner in which they are stated ought everywhere to commend the approval of good taste. Moreover, whatever his readers may severally be inclined to think of his arguments, they can scarcely fail to agree that Mr. Yorke has written a highly interesting book. His object being, as already stated, to trace in the antecedents of Christianity the natural causes of its rise and progress, he has given a selection of quotations from the Jewish writings about the time or shortly before the commencement of the Christian era, and also of the Buddhistic writings long before it, in order that a just estimate may be formed of the extent to which the world is indebted to Christ as a moral reformer. In our opinion Mr. Yorke has shown a sound critical judgment in making this estimate. On the one hand, he is careful to sift out all the elements of the moral teaching which were, so to speak, in the air at the time when Christ taught; and, on the other hand, he is equally careful to distinguish the points wherein the "originality of Christ" was shown. Here we meet with what appears to us a more full appreciation of this "originality" than is shown by most of the other and some of the more eminent writers of the same school.

We shall conclude this notice by quoting two brief passages, one to show the high development of moral feeling which obtained among the Jews immediately anterior to the teaching of Christ, and the other to show the degradation of moral feeling which now obtains in the Roman Catholic ministry of the Christian Church.

"Wear mourning for the Egyptians, suppress the prayer of glorification on the seventh day of the Passover. It is the anniversary of the day when your enemies perished in the Red Sea, and God desires not to be glorified because his creatures have been drowned beneath the waves."

In painful contrast to the singular beauty of this passage, our other quotation is selected from several pages in the same strain which are republished by Mr. Yorke from two pamphlets written expressly for children by a Reverend Father, whose name is, with a singular appropriateness, Mr. J. Furniss. As Mr. Yorke remarks, the Rev. Father Furniss evidently feels that in these degenerate days "Hell is not pictured vividly enough for purposes of practical terrorism, and has accordingly done his imaginative best to supply this great want. And he deserves every credit for his work, for anything better calculated to drive a sensitive child mad with fright it would be impossible to conceive."

After describing the "*Dress of Fire*," and the "*Red-hot Floor*," in one of which there is represented a girl of eighteen, and in the other a girl of sixteen with the Devil taunting their agonies, "The Sight of Hell" goes on to describe—

"'*The Red-hot Oven*.'—See! it is a pitiful sight. The little child is in this red-hot oven. Hear how it screams to come out. See how it turns and twists itself about in the fire. It beats its head against the roof of the oven. It stamps its little feet upon the floor of the oven. You can see on the face of this little child what you see on the face of all in Hell—despair, desperate and horrible."

The only corrective of immoral publications of this description is to be found in reproducing them before public opinion of another kind from that of the unfortunates whose eyes alone they are intended to meet; and it is partly this consideration that has led us to review Mr. Yorke's essay, which, although excellent in itself, is hardly in close enough contact with natural science to demand notice in these pages.

GEORGE J. ROMANES

OUR BOOK SHELF

Iconographie der schalentragenden europäischen Meeresconchylien. Von Dr. W. Kobelt. 4to. Heft 1. (Cassel: Theodor Fischer, 1883.)

THE object of this work is to supply a want which is continually felt by conchologists, and it deserves the greatest success. Dr. Kobelt is well known to science as the editor of the *Jahrbucher* and *Nachrichtsblatt der deutschen Malakozoologischen Gesellschaft*, which has now been published for between fifteen and sixteen years, and as one of the editors of the new *Conchylien-Cabinet* of Martini and Chemnitz; and he is also the author of several works and papers on conchological subjects. It appears from the prospectus of the present work that its scope will be confined to the coasts of Europe, including the English Isles, the Faroes, and Scotland, and bounded by the north coast of Africa, but excluding not only tropical and subtropical species of Mollusca, but those Arctic species from Spitzbergen and the north of Iceland which are not found on the coasts of Upper Norway. This scope, although extensive, is not very definite; and it scarcely accords with our usual notion of the European seas. We do not know what may be the author's limit of depth, whether it is the line of soundings or 100 fathoms; nor whether he will even take the Mollusca now about to be published from the *Triton* cruise between the Faroes and Scotland. The expeditions of the *Josephine*, *Lightning*, *Porcupine*, *Challenger*, *Vöringen*, *Travailleur*, *Washington*, *Knight Errant*, and several others, have of late years done much to aid in the exploration of the European seas at various depths; and the number of species thereby added to the Mollusca has been very considerable and is still increasing. Some additions have likewise been made from time to time to the Mediterranean Mollusca, especially by myself during the present month. Taking into account all these discoveries, I am inclined to reckon the number of species hitherto described as inhabiting the littoral zone and moderate depths in the European seas as not less than 1000; probably 1200 would be nearer the mark.

The first part of the present work, which has now appeared, gives figures of four species only and their varieties, one of which species (*Murex gibbosus*) is Senegalese, and has never (to the best of my knowledge and belief) been found in any part of the European seas. This reduces the number of figured species to 3. Perhaps the species will not be so profusely illustrated in the next and following parts. The published prospectus does not give any idea of the extent of the work. But assuming even that twenty species (large and small) may on an average be figured in each part, the entire work would take not less than from fifty to sixty parts, and would cost for an uncoloured copy 10*l.* to 12*l.*, and for a coloured copy 15*l.* to 18*l.* If all the species known to inhabit the European seas, including the abyssal and benthal zones, are to be figured—and I think this ought to be done—the extent and cost of the publication must be increased by probably a fourth more.

However, such calculations have doubtless been considered by the author or his publisher. The work will assuredly be far more scientific and valuable than the very irregular but expensive *Conchologia Iconica* of the late Mr. Reeve, and be not merely an "ouvrage de luxe."

The family *Muricidæ*, which is the first selected for publication, does not seem to be placed in the usual order of classification. All the figures are admirable. The descriptions are in Latin, the text in German. The geographical, hydrographical, and geological distribution, as well as the odontophore and synonymy, are carefully worked out.

J. GWYN JEFFREYS

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*

[*The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.*]

Sand

I HAVE recently been favoured with a reprint of Mr. J. G. Waller's paper upon sand, read before the Quekett Microscopical Society. The subject is so full of interest that I trust I may be allowed to give it a wider publicity in your columns. To render the study of practical use to geologists and physicists, the first step appears to me to ascertain whether it is possible to distinguish with certainty, by aid of the microscope, sand that has been worn by action of wind from sand that has been for long exposed to surf, and this again from sand brought down by torrents. The degree of rounding and the average size of the grains would be, I presume, among the chief characteristics, and it is to be hoped that naturalists abroad will kindly forward examples of undoubted blown and torrential sand, so that this point at least may be settled.

If it should prove that the origin of sand can be pronounced upon with any degree of certainty, from a microscopical examination, we should come into possession of a most valuable aid to the study of at least Tertiary geology. It is well known that marine and freshwater deposits succeed each other repeatedly throughout our Eocene formations, and where deposits of sand are in juxtaposition, it is at present impossible to draw any line between them. It is only possible to surmise that they are of different origin and therefore age, when pebble or oyster beds on the one hand, or films of clay with plant impressions on the other, are accidentally included in them. So far as our own Eocenes go, it appears from Mr. Waller's results that their sands, when of marine origin, possess a percentage of flint grains, but that purely fluviatile sands do not possess any. Marine and freshwater sands are in direct contact in very many of our Eocene sections, and I hope Mr. Waller's researches will enable us to distinguish them and apportion the proper thickness to each.

With regard to the relative rarity of flint-grains and preponderance of quartz, in all the Tertiary and recent sands hitherto examined, it appears just possible that the concussion the flint grains must undergo when beaten for ages in the surf, might induce a molecular change from the colloid to crystalline state, but in the absence of any fact or argument to support such a theory it cannot be seriously entertained. It is however possible that quartz grains reach a final state of subdivision, and then suffer relatively little by attrition, and are therefore almost indestructible, while flint grains become rapidly degraded into mud. This appears to be very much the opinion Mr. Waller has formed. It does seem at first sight matter for surprise that the grinding of flint should not more largely affect the composition of our sea sand; but we must on the other hand reflect on the indestructible nature of the quartz grains that chiefly compose it, that it may have been accumulating since palæozoic times, and the enormous bulk of the quartzose rocks that must have been ground down to supply it during such vast ages, and then compare the sources with flints which in comparison only appeared yesterday, and then but as scattered segregations in a limited portion of a single formation. Flints and flint beaches, recent and ancient, are at our gates, and are continuously renewed by the wearing away of the chalk of which so much of our part of England is composed, and their aggregate mass therefore astounds us; but they after all occur over only a